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TUNG & ASSOCIATES
Suite 120
838 W. Long Lake Road
Bloomfield Hills, MI 48302

EXAMINER

WONG, EDNA

ART UNIT	PAPER NUMBER
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1795

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05/20/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/811,621	Applicant(s) SHIH ET AL.	
	Examiner EDNA WONG	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-7,9,12,13 and 17-26 is/are pending in the application.
- 4a) Of the above claim(s) 17-20,25 and 26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-7,9,12,13 and 21-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

This is in response to the Amendment dated January 14, 2008. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

Response to Arguments

Election/Restrictions

Applicant's election of Group I, claims **1-2, 4-7, 9, 12-13 and 21-24**, in the reply filed on April 9, 2008 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

The requirement is still deemed proper and is therefore made FINAL.

Accordingly, claims **17-20 and 25-26** are withdrawn from consideration as being directed to a non-elected invention.

Claim Rejections - 35 USC § 102/103

I. Claims **1 and 2** have been rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Klaveness et al.** (US Patent Application Publication No. 2001/0022963 A1).

The rejection of claims 1 and 2 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Klaveness et al. has been withdrawn in view of Applicants' remarks.

II. Claim **9** has been rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Klaveness et al.** (US Patent Application Publication No. 2001/0022963 A1).

The rejection of claim 9 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Klaveness et al. has been withdrawn in view of Applicants' remarks.

III. Claims **1-2 and 5-6** have been rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Anderson** (US Patent No. 6,638,621 B2).

The rejection of claims 1-2 and 5-6 under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Anderson has been withdrawn in view of Applicants' remarks.

IV. Claim **9** has been rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Anderson** (US Patent No. 6,638,621 B2).

The rejection of claim 9 under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Anderson has been withdrawn in view of Applicants' remarks.

V. Claims **1-2 and 5-6** have been rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Meine et al.** (US Patent No. 6,689,223 B1).

The rejection of claims 1-2 and 5-6 under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Meine et al. is as applied in the Office Action dated October 31, 2007 and incorporated herein The rejection has been ***maintained*** for the following reasons:

Applicants state that Meine et al., is *non-analogous art* (not in the same field of endeavor i.e., electroplating of metal).

In response, present claims 1-2 and 5-6 are claiming an electrolyte bath. What does the *electroplating* of a metal have to do with these bath composition claims? Present claims 1-2 and 5-6 are not claiming an electroplating method. A bath composition is distinguished by its chemical structure not by its function (MPEP § 2112.01(I),(II)).

The Applicant has a different reason for, or advantage resulting from doing what the prior art relied upon has suggested, it is noted that it is well settled that this is not demonstrative of nonobviousness. *In re Kronig* 190 USPQ 425, 428 (CCPA 1976); *In re Linter* 173 USPQ 560 (CCPA 1972); the prior art motivation or advantage may be different than that of Applicants while still supporting a conclusion of obviousness. *In re Wiseman* 201 USPQ 658 (CCPA 1979); *Ex parte Obiaya* 227 USPQ 58 (Bd. of App. 1985) and MPEP § 2144.

Applicants state that Examiner has not established that the modified fatty alcohols (including ethylene and propylene oxide) of Meine et al. is equivalent to any one of Applicants non-ionic polymers, but even assuming *arguendo*, such is the case, such a fact does not help Examiner in attempting to modify non-analogous art to achieve Applicants' invention while ignoring the structural elements of Applicants' claims.

In response, present claim 1, lines 5-7, recites:

“said non-ionic polymer selected from the group consisting of an alkoxylated alcohol, an alkoxylated amine, and an alkylphenol alkoxylate.”

Meine teaches:

2% by weight of C₁₀₋₁₄ fatty **alcohol** + 1 **PO** + 1 **EO** ether (col. 2, lines 25-26).

The ether disclosed by Meine would have been **an alkoxylated alcohol**. Thus, Meine teaches the structural elements of Applicants' claims.

When the reference discloses all of the limitations of a claim except a property or function, and the examiner cannot determine whether or not the reference inherently possess properties which anticipate or render obvious the claimed invention but has basis for shifting the burden of proof to Applicant as in In re Fitzgerald 619 F.2d 67, 205 USPQ 594 (CCPA 1980). See MPEP §§ 2112-2112.02.

Applicants state that the Examiner is confusing the broadness of the claim language and the clear meaning of Applicants' claim language to one of ordinary skill in

the art with an illegitimate requirement of requiring additional compositional specificity to narrow the claim while ignoring Applicants' structural elements. Moreover, Examiner, in addition to ignoring the plain meaning of Applicants' claim elements, is citing non analogous art (not in the same field of endeavor).

Applicants state that the Examiner insists on misreading Applicants' claim as strictly a composition claim. Examiner has cited nothing in the MPEP or the case law that would allow Examiner to transform Applicants' machine/manufacture claim into a composition claim, thereby ignoring Applicants' structural claim elements and attempting to prevent Applicants from claiming their invention.

In response, present claim 1 recites:

"An electrolyte **bath**, comprising:
an electrolyte solution suitable for metal electroplating;
and
a composition comprising **an organic acid** and **a non-ionic polymer mixed with said organic acid**, said non-ionic polymer selected from the group consisting of an alkoxyated alcohol, an alkoxyated amine, and an alkylphenol alkoxyate;

wherein said composition is disposed as a suspended layer within said electrolyte solution, said suspended layer adapted to form a wetting layer on a substrate as said substrate is passed through said suspended layer, said electrolyte bath adapted to form said wetting layer on said substrate prior to an electroplating process in said electrolyte solution."

What is the meaning of "an electrolyte bath"? According to Applicants' specification, it is **an electrolyte solution** (pages 13-14, [0032]) and **a composition** (page 11, [0026]). **There is no hardware.**

Applicants' apparatus (machine/manufacture), i.e., *an electrochemical plating (ECP) system 10*, is described on pages 12-13, [0020] to [0031], and Fig. 1, which has

a copper anode **16**, a cathode **18** and a current source **12**. The electrolyte bath as presently claimed is not an electroplating apparatus because it is absent such defining structures. The electrolyte bath as presently claimed is a solution according to Applicants' specification (page 11, [0026]; and pages 13-14, [0032]).

The structural elements in Applicants' claim language are chemical, and are highlighted in bold above for present claim 1. The Examiner has shown in her rejections that Meine has taught Applicants' chemical structural elements.

The words of a claim must be given their "plain meaning" unless they are defined in the specification (MPEP §2111).

There is no hardware being claimed. A machine/manufacture claim must be distinguished from the prior art in terms of ***mechanical structure, not chemical structure*** (i.e., a solution and a composition) [MPEP 2114].

VI. Claim **9** has been rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Meine et al.** (US Patent No. 6,689,223 B1).

The rejection of claim 9 under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Meine et al. is as applied in the Office Action dated October 31, 2007 and incorporated herein The rejection has been ***maintained*** for the reasons as discussed above.

Applicants' remarks have been fully considered but they are not deemed to be

persuasive.

Claim Rejections - 35 USC § 103

I. Claims **4, 7 and 21-22** have been rejected under 35 U.S.C. 103(a) as being unpatentable over **Klaveness et al.** (US Patent Application Publication No. 2001/0022963 A1) as applied to claims 1 and 2 above.

The rejection of claims 4, 7 and 21-22 under 35 U.S.C. 103(a) as being unpatentable over Klaveness et al. as applied to claims 1 and 2 above has been withdrawn in view of Applicants' remarks.

II. Claims **5 and 6** have been rejected under 35 U.S.C. 103(a) as being unpatentable over **Klaveness et al.** (US Patent Application Publication No. 2001/0022963 A1) as applied to claims 1 and 2 above, and further in view of **BASF** ("Surfactants: Pluronic & Tetronic", pp. 1-40).

The rejection of claims 5 and 6 under 35 U.S.C. 103(a) as being unpatentable over Klaveness et al.) as applied to claims 1 and 2 above, and further in view of BASF has been withdrawn in view of Applicants' remarks.

III. Claims **12-13 and 23-24** have been rejected under 35 U.S.C. 103(a) as being unpatentable over **Klaveness et al.** (US Patent Application Publication No. 2001/0022963 A1) as applied to claim 9 above.

The rejection of claims 12-13 and 23-24 under 35 U.S.C. 103(a) as being unpatentable over Klaveness et al. as applied to claim 9 above has been withdrawn in view of Applicants' remarks.

IV. Claims **4, 7 and 21-22** have been rejected under 35 U.S.C. 103(a) as being unpatentable over **Anderson** (US Patent No. 6,638,621 B2) as applied to claims 1-2 and 5-6 above.

The rejection of claims 4, 7 and 21-22 under 35 U.S.C. 103(a) as being unpatentable over Anderson as applied to claims 1-2 and 5-6 above has been withdrawn in view of Applicants' remarks.

V. Claims **12-13 and 23-24** have been rejected under 35 U.S.C. 103(a) as being unpatentable over **Anderson** (US Patent No. 6,638,621 B2) as applied to claim 9 above.

The rejection of claims 12-13 and 23-24 under 35 U.S.C. 103(a) as being unpatentable over Anderson as applied to claim 9 above has been withdrawn in view of Applicants' remarks.

VI. Claims **4, 7 and 21-22** have been rejected under 35 U.S.C. 103(a) as being unpatentable over **Meine et al.** (US Patent No. 6,689,223 B1) as applied to claims 1-2 and 5-6 above.

The rejection of claims 4, 7 and 21-22 under 35 U.S.C. 103(a) as being unpatentable over Meine et al. as applied to claims 1-2 and 5-6 above is as applied in the Office Action dated October 31, 2007 and incorporated herein. The rejection has been ***maintained*** for the reasons as discussed above.

Applicants also state that the Examiner's argument that varying the various concentrations of the cleaning composition of Meine, in forming one lower aqueous phase I and an upper aqueous phase II immiscible with the lower phase I, in an effort to achieve Applicants' invention are result effective variables is likewise misplaced since Meine does not disclose or suggest Applicants' electrolyte bath or "an electrolyte solution suitable for metal electroplating" or an electrolyte bath adapted to form a wetting layer on a substrate prior to an electroplating process.

In response,

(i) As to Meine does not disclose or suggest Applicants' electrolyte bath, Meine teaches Applicants' chemical structural elements (see above).

Furthermore, Meine teaches:

In the most simple case, a composition according to the invention consists of a lower continuous phase, which consists of the entire phase I, and of an upper continuous phase which consists of the entire phase II. ***However, one or more continuous phases of a composition according to the invention may also contain parts of another phase in emulsified form*** so that, in a composition such as this, phase I for example is partly present as continuous phase I, which represents the lower continuous phase of the composition, and is partly emulsified as discontinuous phase I in the upper continuous phase II. The same applies to phase II and other continuous phases.

In another preferred embodiment of the invention, one or both of the continuous phases I and II contain(s) parts, preferably 0.1 to 25% by volume and more preferably 0.2 to 15% by volume, based on the volume of the particular continuous phase, of the

other phase as dispersant. In this embodiment, the continuous phase I or II is reduced by that part by volume which is distributed as dispersant in the other phase. Particularly preferred compositions are ***those in which phase I is emulsified into phase II in quantities of 0.1 to 25% by volume and preferably in quantities of 0.2 to 15% by volume, based on the volume of phase II.***

In another preferred embodiment of the invention, part of the two phases - in addition to the continuous phases I and II - is present as an emulsion of one of the two phases in the other phase, this emulsion being separated from those parts of phases I and II which are not involved in the emulsion by two clearly defined phase boundaries, namely an upper and a lower phase boundary (col. 3, lines 10-47).

These teachings would have suggested wherein said composition is disposed as a suspended layer ***within*** said electrolyte solution (present claim 1, lines 8-9); and wherein the composition is present in said electrolyte solution in a concentration of about 5% by weight (present claim 4) [= i.e., phase I is emulsified into phase II in quantities of 0.1 to 25% by volume and preferably in quantities of 0.2 to 15% by volume, based on the volume of phase II as taught by Meine (col. 3, lines 30-36)].

In the case where the claimed ranges overlap or lie inside ranges disclosed by the prior art, a *prima facie* case of obviousness exists (MPEP § 2144.05(I)).

Meine teaches ***2% by weight*** of C₁₀₋₁₄ fatty ***alcohol*** + 1 ***PO*** + 1 ***EO*** ether (col. 2, lines 25-26) and ***8% by weight*** of citric acid (col. 2, line 28).

Applicants claim "wherein said organic acid is present in said composition in ***a wt.% of about 10***, and wherein said non-ionic polymer is present in said composition in ***a wt.% of about 5***" (present claim 7).

The word "about" permits some tolerance or flexibility to the claimed range (MPEP § 2173.05(b)(A)).

A 2% by weight of C₁₀₋₁₄ fatty alcohol vs. 5 % by weight non-ionic polymer; and a 8% by weight of citric acid vs. 10% by weight organic acid would have been obvious because a *prima facie* case of obviousness exists where claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties (MPEP § 2144.05(I)).

(ii) As to Meine does not disclose or suggest “an electrolyte solution suitable for metal electroplating” or an electrolyte bath adapted to form a wetting layer on a substrate prior to an electroplating process.

Applicants reliance on the intended use of the electrolyte bath, “an electrolyte solution suitable for metal electroplating”, and the adaptation of the electrolyte bath to form a wetting layer on a substrate prior to an electroplating process, adds nothing to distinguish the chemical structural elements of the bath.

VII. Claims **12-13 and 23-24** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Meine et al.** (US Patent No. 6,689,223 B1) as applied to claim 9 above.

The rejection of claims 12-13 and 23-24 under 35 U.S.C. 103(a) as being unpatentable over Meine et al. as applied to claim 9 above is as applied in the Office Action dated October 31, 2007 and incorporated herein The rejection has been ***maintained*** for the reasons as discussed above.

Applicants' remarks have been fully considered but they are not deemed to be persuasive.

Allowable Subject Matter

The indicated allowability of claims **17-20 and 25-26** is withdrawn in view of Applicant's election of Group I, claims 1-2, 4-7, 9, 12-13 and 21-24, in the reply filed on April 9, 2008.

Response to Amendment

Claim Rejections - 35 USC § 112

Claims **1-2, 4-7, 9, 12-13 and 21-24** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1

lines 9-13, recite "said suspended layer adapted to form a wetting layer on a substrate as said substrate is passed through said suspended layer, said electrolyte bath adapted to form said wetting layer on said substrate prior to an electroplating process in said electrolyte solution."

Claim 9

lines 11-15, recite “said suspended layer adapted to form a wetting layer on a substrate as said substrate is passed through said suspended layer, said electrolyte bath adapted to form said wetting layer on said substrate prior to an electroplating process in said electrolyte solution.”

Applicants' specification, pages 1-17, does not disclose adapted to form a wetting layer on a substrate as said substrate is passed through said suspended layer, said electrolyte bath adapted to form said wetting layer on said substrate prior to an electroplating process in said electrolyte solution. Thus, there is insufficient written description to inform a skilled artisan that applicant was in possession of the claimed invention as a whole at the time the application was filed.

Furthermore, “adapted” was not disclosed in Applicants' specification because Applicants' specification does not disclose what is meant by “adapted” and/or provide how one would have carried this out.

The Examiner has carefully considered the entire specification as originally filed, however, there is found no literal support in the specification for the newly added limitations in amended claims 1 and 9. Applicants have not provided the page number and line numbers from the specification as to where the newly added limitations are coming from. *Ex parte Grasselli*, 231 USPQ 393 (Bd. App. 1983) *aff'd mem.* 738 F.2d 453 (Fed. Cir. 1984).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EDNA WONG whose telephone number is (571) 272-1349. The examiner can normally be reached on Mon-Fri 7:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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/Edna Wong/
Primary Examiner
Art Unit 1795

EW
May 17, 2008